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AUTHOR	Abbott, Margaret
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ABSTRACT

This document contains reports of three projects in the handicapped component of the Grand Forks, North Dakota, Teacher and His Staff program supported by ESEA Title III. The first project reported is "A Pilot Study Using a Teacher Aide Employing Operant Procedures to Assist a Speech Clinician in a Public School Setting." Included is description of the development of new methods and materials (e.g., an innovative reinforcement device which dispenses the tokens, which are trading stamps) for use by the teacher aide in working with nine children with severe articulation disorders. The second report, an "Evaluation of Teacher-Aide Directed Taped Instruction in the Educable Mentally Retarded Classroom," describes an attempt to determine whether seven educable retarded junior high school students could learn and retain information through directed audio tapes. It describes the use of a teacher aide to transcribe textbook information onto tapes, to direct instruction using the tapes, and to administer and record results of pre- and posttests used to determine the technique's effectiveness. The third paper reports "The Development of a Physical Education Program for Mentally Educable Students in Winship Elementary School." General organization and content of the program are described. Each report contains description of project results, evaluation (all were considered generally successful), and recommendations for further study or modification. (JS)

BESE/TITLE III

ED035579

EVALUATION HANDICAPPED COMPONENT

IMPLEMENTATION OF THE TEACHER AND HIS STAFF

Grand Forks, North Dakota

1968-1969

Prepared for

MR. VERNON EBERLY, STATE COORDINATOR TITLE III
The State of North Dakota
Department of Public Instruction
Bismarck, North Dakota

and

Miss Janice Smaltz
State Director of Special Education

and

Director
Division of Plans and Supplementary Centers
Office of Education
400 Maryland Avenue, S.W.
Washington, D. C. 20202

and

The School Board
Grand Forks, North Dakota
Dr. Wayne Worner, Superintendent of Schools
Dr. Harold Bergquist, Assistant Superintendent
Dr. Donald Mrdjenovich, Assistant Superintendent

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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by

Margaret Abbott
Director of the Teacher and His Staff Project

SP003428

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EVALUATION REPORT

A Pilot Study Using a Teacher Aide Employing Operant Procedures to Assist a Speech Clinician in a Public School Setting

Supported by

Title III
Elementary and Secondary Education Act of 1965 (P.L. 89-10)

by
Dean C. Engel, Ph.D.
Project Evaluator

INTRODUCTION

In this evaluation I have been quite critical of a number of aspects of the program. Partly this is because I helped set it up, but more importantly I feel it should be done again and that we need some record of many of the mistakes we made so it won't be necessary to make them all again.

It is fortunate that we had some control groups to permit comparisons because one might conclude from this report that the project was a messy failure. The fact is that our untrained aide changed the speech behavior of the experimental subjects more and did it faster than did a professional speech clinician using other methods.

If this project is repeated and some of the "bugs" worked out the efficiency might be truly startling.

Purpose:

The purpose of this study was to determine if a teacher aide could efficiently be utilized to assist the speech clinician in a public school setting. A second purpose was to develop new methods and materials and to test their effectiveness when utilized by the teacher aide. The method employed involved the use of operant procedures and the tokens used were trading stamps.

DEVELOPMENT OF MATERIALS:

In addition to evaluating the program, it was understood that I would help develop materials and help plan the program. In future programs, I would suggest that the person who helps set up the program not evaluate it.

The suggestion to use operant procedures was made prior to the time I entered the scene. It was one of the reasons that I was interested in being associated with the program. Specific materials for token reinforcement were to be developed prior to the beginning of the program. I have long felt that the use of trading stamps might be a particularly effective token system for operant procedures in speech therapy. An innovative reinforcement device dispensing trading stamps was planned.

Mr. Chandler Ward, District Representative of the Sperry & Hutchinson Company, was contacted by Mr. Darrell Peterson. He indicated that he had a used trading stamp dispenser and that he felt it might be appropriate for us to purchase S&H Green Stamps. We filled out the contract application but it was refused by the S&H Office in New York City. They feared adverse publicity. A letter was sent by me to Mr. Robert Salvis, a copy of which is included in the appendix of this report. In the letter, the

purpose of the stamps was explained more fully. On August 29, three days after the letter was sent, a long distance phone call from Mr. Hilding Johnson of the Sperry & Hutchinson Company indicated that we not only would be permitted to buy stamps but that they would give us the first 50,000.

Mr. Peterson enlisted the aid of the shop teacher at South Junior High to help build the box and front panel for the reinforcement device. Switches were left over from a previous project by a graduate student in the Department of Speech Pathology and Audiology at the University. Sockets, bulbs and wires were purchased and the device assembled and wired by me in the basement of my home. It was painted and ready to go in time to be taken to a special study institute sponsored by the State Director of Special Education in Carrington, North Dakota, on September 12, 13 and 14 where it was shown to the group and discussed with Dr. Howard Sloane, the guest lecturer.

In addition to the reinforcing device, a "time out mask" was constructed. This consisted of a plywood face with plywood fingers in the ears and one-way lenses over the eyes. It had the words "time out" in place of a mouth. In some of the steps in the therepy sequence, this time out mask was used to stop the child and make him wait when he misarticulated the sound being worked on. Both the use of trading stamps as tokens and the time out mask were innovative.

A third innovative device was the use of forms sent home to the parents of the child during the carryover stage of therapy. If the parents certified that the child used his new sound in the home situation a certain number of times, the child received

tokens for this change of behavior in addition to those he earned in the therapy setting.

A new therapy sequence was written based on the sensory-motor therapy of Eugene McDonald. This sequence was selected because McDonald suggests that 95% of the cases we see can already produce the defective sound in some phonetic context so it is usually not necessary to teach the child to produce the sound. Since we propose to use a non-professional, this was considered desirable. A number of steps were added in the area of auditory training and a number at the end to facilitate carryover. A copy of this sequence is included in the appendix of this report. The aide found some of the steps too complicated for younger children or mechanically impractical for her. Some of her difficulty stemmed from her lack of training.

SELECTION OF THE AIDE:

The aide hired was Mrs. Caryll Atkinson. She seemed quite interested in the program. She purported to know nothing about speech therapy or about operant procedures. She understood that the program was experimental and that the development of procedures would depend on the results of what we tried.

TRAINING OF THE AIDE AND OF THE SPEECH CLINICIAN:

Both the therapy sequence and the use of operant procedures were new to both the speech clinician and to the teacher aide. Both the clinician and the aide came to the Department of Speech Pathology and Audiology at the University one afternoon, as they neared the end of speech and hearing screening in the fall. The materials were shown and their use demonstrated. The

therapy sequence was presented and each step was gone over. Opportunities for questions were given at that time. In addition to this, Mr. Peterson enrolled for a three semester hour course with me entitled Research Problems in Speech Pathology. This was an individually tailored course to provide him with exposure to the literature on operant procedures as they have been applied to Speech Pathology. He read and reported on a number of articles and books. In addition to this, Mr. Peterson traveled to Salt Lake City, Utah, to visit Dr. Howard Sloane and his operations with operant procedures. He also traveled to Tempe, Arizona, and visited with Dr. Donald Mowrer. As a result, in the course of the year, Mr. Peterson acquired considerable sophistication and expertise in the area of operant procedures. However, at the critical time when the program was being first instituted, he was still relatively naive.

In addition to the description of the therapy sequence and the demonstration of the equipment at the University for Mrs. Atkinson, I went out to Nathan Twining School several times near the outset of the program to help her with the various steps in the therapy sequence. At this time, Mr. Peterson had already picked up his caseload and was quite completely scheduled in a different room. As originally written, the steps in the therapy sequence were not explained in enough detail for Mrs. Atkinson to readily understand all of them. As a result, there were many times when she did not know how to proceed. Neither Mr. Peterson nor myself could give her nearly as much help as she needed. As a result, she

became upset and discouraged. There were tears and fits of depression.

In critically discussing the therapy sequence with Mrs. Atkinson in the spring, it was evident that some parts of the therapy sequence were still not understood and some of the knowledge necessary for her to carry out some of the steps would require further training. In view of this inadequate, almost non-existent training of the aide, the reported results of successful therapy seem almost unexpected.

SELECTION OF SUBJECTS:

Nine children with severe articulation disorders were selected at Nathan Twining School to be the original study group to receive operant therapy from the teacher aide. A group of nine children from Dakota School at the Minot Air Force Base were selected to serve as one control group. These children were being seen by a professional speech clinician at that school. The second control group was selected from the public schools in Grand Forks County at Forest River and Gilby because these schools did not have a speech therapy program.

Although subjects in all three groups had severe articulation problems, the operant group at Nathan Twining School was considerably more severe than the other two groups. Although this perhaps put the operant program to a more difficult test, it is also easier to show change in persons who have further to go.

COMPARATIVE MEASURES:

The Arizona Articulation Proficiency Test was used to evaluate the effects of therapy. In this test the various sounds of English are assigned a weighted value based on the relative frequency of that sound in the language. The test yields a single numerical score which is said to be indictive of intelligibility.

The subjects in all three groups were tested in the fall, prior to therapy. The subjects in the operant program were dismissed from the program when they achieved an AAPS score of 96 or better. All of these children were dismissed by mid-year. When the children at Dakota School at Minot Air Force Base had received an equivalent amount of therapy, which we might term "traditional" they were retested. The before and after AAPS scores were compared and a percentage of improvement was calculated using the following formula:

$$\frac{\text{Second AAPS Score - First AAPS Score}}{\text{First AAPS Score}} \times 100 = \% \text{ of Improvement}$$

The operant group at Twining School improved from 4.3% to 80.4%. The group at Dakota School improved from 1.7% to 28%. The group at Forest River and Gilby improved from -9% to 23.9%. The individual in this group who improved the most was discoverdd to have been enrolled for therapy at the University of North Dakota during part of the period after he was tested in the fall.

The total improvement scores for the operant group was 298. The total improvement scores for the group at Dakota School in Minot was 114.5. The total improvement scores for the group in Grand Forks County was 82.2. These are preliminary

data and will be confirmed by Mr. Peterson later. He is writing this study up as a Master's thesis which should be available sometime next year.

RESULTS:

Mr. Peterson reports that the difference between the improvement scores of the experimental group and the control group from Minot was significant at the .05 level as was the difference between the experimental group and the control group from Grand Forks County. However, the difference between the group at the Minot Air Force Base and the control group in Grand Forks County was not significant.

It should be re-emphasized that changes in the experimental group were exaggerated because they were more severe to begin with, but changes did occur in their test scores, these changes were gross, and they were effected much more quickly than in the program at Minot where the children were being seen less intensively, but by a professional therapist.

Following the dismissal of the original study group, the teacher aide worked with various persons from Mr. Peterson's caseload, in some cases on carryover and in other cases for more extensive segments of the therapy sequence. No formal comparison of the results of this therapy with any other program were made. It was my subjective impression that this was an effective utilization of the teacher aide.

A retest of the children in the three study groups this fall would be interesting and appropriate.

EVALUATION:

It is my impression that the overall results of this

program indicate success in spite of the fact that the beginning was extremely ragged, the materials untried, parts of the therapy sequence were untried, parts of the therapy sequence are not necessarily theoretically well grounded, the teacher aide was poorly supervised, the speech clinician began the program relatively unschooled about operant procedures and time for preparation of the program was limited. The aide became frustrated and at times, perhaps, short tempered with the materials and the children. She may, at times, have functioned as a negative reinforcer for improved speech. Although the aide apparently never did understand all of the therapy sequence, it would seem she understood enough of the parts which were essential to create a situation in which the speech bahavior of the children changed. It is concluded by this evaluator that a teacher aide can be utilized to assist a speech clinician in a public school setting.

It is further concluded that the use of operant procedures in the public school setting is easily justified. With appropriate training and supervision, this form of therapy is highly efficient. In this program even without proper training and supervision of the aide, there are suggestions that therapy was more efficient than "traditional" therapy.

The use of trading stamps as tokens for operant procedures appears to be useful and economically feasible. The program can be run for less than 50¢ per hour for stamps. The program used 120,000 trading stamps worth approximately $310 without cost to the Title III program. The use of operant procedures is not at all depended upon the use of trading

stanps. Other forms of reinforcement might be equally appropriate and perhaps even more efficient for some cases.

The "time out mask" was felt by the teacher aide and the school clinician to not be effective. It will be further evaluated at the University of North Dakota Speech and Hearing Clinic.

The therapy sequence needs to be radically overhauled and rewritten in more detail.

RECOMMENDATIONS:

The recommendations made in the preliminary report dated April 16 will not all be repeated. Three major points should be made. More time should have been spent on planning and preparing materials and equipment for this program, both the clinician and the aide should be trained prior to the institution of this type of program, and the aide should have more supervision, at least at first. The clinician should not pick up his caseload until a week or so after the aide begins therapy.

IN CONCLUSION:

This program has been most profitable to myself and I suspect to Mr. Peterson. It was also profitable to the children involved and to the field of Speech Pathology. As was previously mentioned, Mr. Peterson is writing a Master's thesis based upon this project. In addition, a paper based on this project was submitted and has been accepted to be read at the American Speech and Hearing Association National Convention in Chicago in November.

I have built an additional machine and am continuing to

experiment with operant procedures and trading stamps as tokens at the University of North Dakota Speech and Hearing Clinic.

Dean C. Engel, Ph.D.
Project Evaluator

APPENDIX

August 26, 1968

Mr. Robert Salvas
Sperry & Hutchinson Company
330 Madison Avenue
New York, New York 10017

Dear Mr. Salvas:

Mr. Chandler Ward, representative of Sperry and Hutchinson here in Grand Forks, spoke with Mr. Darrell Peterson, speech clinician of the Grand Forks Public Schools, and myself several weeks ago about the possibility of using S&H green stamps in a special project in speech therapy. We were recently informed that your office had decided not to provide us with the stamps for this purpose. I thought perhaps our application did not make our proposed use of the stamps clear so I wanted to provide you with further information on which to base your decision.

I am functioning as a consultant to Mr. Peterson and to the Grand Forks Public Schools in a special project funded by Title III of the Elementary and Secondary Education Act of 1965 which will employ a "teacher aide" in the speech therapy program in one school in the Grand Forks school system. One of the purposes of this project is to develop new methods and materials and test their effectiveness when utilized by the teacher aide. We propose to develop operant conditioning procedures that can be applied to the modification of children's speech in a school setting by a non-professional person.

The development of operant conditioning prodedures by B. F. Skinner and many others is not new. However, the application of the procedures developed in the psychology laboratories to clinical settings with human beings is a relatively recent development. The problem of what to use for reinforcing or rewarding the uninstitutionalized child or adult becomes an immediate problem. The use of food is fairly common but when working with speech, we don't want to put things in children's mouths and then make them talk around them. The use of tokens in the form of poker chips, exchangeable for toys or money, is a fairly frequent reinforcing device. Verbal or social reinforcement such as smiling, the word "good", or a pat or hug for a small child is frequently used for reinforcement. It has long been a feeling of mine that an appropriate and efficient means of reinforcing children and even adults would be the use of trading stamps. Their relatively small monetary value per unit, and the fact that redemption centers for the

stamps are already set up, and the fact that many persons already have had some experience with trading stamps at home so they already have some value to them make stamps seem a very promising means of reinforcing behavior. To the best of my knowledge trading stamps have never been used in this way for this purpose so I can cite you no precedent.

I propose to design a reinforcing panel which will be a masonite sheet on which is painted a clown's face. The eyeballs will be light bulbs. A stamp dispenser will be built behind the board which will dispense stamps through the clown's smiling mouth. The process of modifying a speech sound will be broken into twenty-five or thirty discrete operations. In each of these steps the child will be asked to respond in some way to a stimulus. When his response is correct, the clown's eyeballs will light up and we will reinforce him by dispensing a stamp through the clown's mouth. At the conclusion of a fifteen or twenty minute session, the child would paste his stamps in his book and proceed back to his classroom. When a child completes the book or books, he can take them to the S&H redemption center and buy toys with them or whatever he wants, just as his mother does at the local grocery store.

We will not be giving the stamps as prizes, we will not be selling them, we will not be redeeming them ourselves. They will be dispensed one stamp at a time over a period of days, weeks and months as we move the child step by step from his defective speech toward normal speech.

Let me cite you a couple of specific examples of what these steps might be to perhaps make clearer the use of stamps in this situation. Suppose a child substitutes w for r. We want to be sure he can hear the difference between the two sounds. We seat him before the panel with two buttons, one of which is "wa" and one of which is "ra". We present him with a series of syllables which are either "wa" or "ra", and he is asked to listen to these sounds and press the appropriate button. When he is correct, the lights go on and he gets a green stamp. When he is incorrect, the lights do not go on and he does not get a stamp. When he reaches a pre-determined criteria of say twenty consecutively correct responses, we move on to the next step in the procedure.

Considerably further along the sequence in the correction of the sound, when he can produce the sound and then incorporate it into running speech, we may ask the child to read a sentence that contains several r sounds. If he reads the sentence with all good r sounds, the lights will go on and he will receive a stamp. If he misarticulates any of the sounds, the light does not go on and he does not receive a stamp, etc.

Perhaps the specific way we proposed to use these stamps

was clear to you before, but I wanted to be sure your refusal to provide us with these materials was based on a fairly complete understanding of what we proposed to do.

If this use of trading stamps turns out to be as successful as I suspect it might, we intend to publish the results. This might well open up a new market for the use of trading stamps beyond the traditional merchandizing concept, not just in speech correction but in many other areas as well. I sincerely hope you will reconsider our application.

I would very much appreciate haaring from you on this matter immediately bacause if we are to proceed with this, we will need to build a reinforcement panel in the next two weeks. If you cannot provide us with your product, we will need to investigate other stamp companies or alternatives other than trading stamps.

If you wish to call me, I can be reached either at my office - 777-3232 or at my home - 772-4668 ary time this week.

Sincerely,

Dean C. Engel, Ph.D.
Department Chairman

DCE/fa

SEQUENCE OF OPERATION IN CORRECTION OF A DEFECTIVE ARTICULATION SOUND

I. Heightening responsiveness to patterns of sensation.

1. Bisyllable practice with first syllable repeated. Clinician produces a bisyllable or plays card with bisyllable on it. If subject repeats it correctly, lights go on and he gets a stamp. He is asked what parts of his mouth he felt touching. If he is correct, he is reinforced.

2. Bisyllable practice imitating stress pattern. If the child correctly imitates iambic or trochaic pattern and sounds, he should be reinforced. Child is asked where the stress was. If correct, he should be reinforced.

3. Varied vowel in double syllable. e.g., (biba) ($\beta_{\cdot}^{\prime}$ bu) and present as iambs and trochees. Reinforce correct imitation.

4. Vary consonant in the double syllable using same vowel and present as iambs and trochees. Reinforce correct imitation.

5. Vary both consonant and vowel in the double syllable and present as iambs and trochees. Reinforce correct imitation.

6. Trisyllable practice. Present trisyllable varying consonants and vowels and with stress on varied syllables. Reinforce correct imitation. (Examples on p. 143, McDonald)

7. Present bisyllables containing abutting consonants. Vary stress. Reinforce correct imitation. (see sheet)

II. Heightening awareness to patterns of auditory sensations.

8. Present pairs of syllables beginning with the standard sound and error sound. Subject is asked to indicate by pushing a button whether pairs are "same" or "different".

9. Present a single syllable beginning with either the standard sound or the error sound. Subject is asked to indicate (by pushing a button) which sound is presented. (i.e. "ra" or "wa")

10. Words containing the sound are presented in a sentence. Subject is asked to indicate (by pushing a button) whether the sound was produced correctly or incorrectly.

11. Subject reads words or names pictures. Clinician says the same word either the way the subject said it or differently. Subject is asked to indicate (by pushing a button) whether the clinician produced the sound the same as he did or differently.

12. From deep test select contexts in which the sound is produced correctly and incorrectly. Record (on the language master) the subject producing a number of words or word pairs in which he produces the sound correctly and a number in which he produces the sound incorrectly. When recordings are played the subject is asked to indicate (by pushing a button) whether the sound was produced correctly or incorrectly.

13. Subject produces words or word pairs in which he produces the sound correctly and some in which he produces the sound incorrectly. After each production, he is asked to indicate (by pushing a button) whether the sound he produced was correct or incorrect.

III. Reinforcing correct articulations of error sound

14. Select a sound which is correct in at least one phonetic context. Have child produce the sound sequence in "slow motion". Reinforce correct productions.

15. Have child produce double syllable with correct context and vary stress on first or second syllable as directed. Reinforce correct productions.

16. Have child produce bisyllable with last part of second syllable covered so correct sound will be prolonged or postured. Reinforce correct production.

17. Practice correct context in a short sentence. Begin to vary stress (as per page 145, McDonald). Reinforce correct production.

IV. Facilitating correct articulation in varied contexts.

18. Modify movement patterns which have produced a satisfactory sound by changing words so there is a different vowel following or proceding the sound. Have child read or repeat. Reinforce correct productions. (See pages 146 and 147, McDonald)

19. Make lists of 5 or ten words that end and begin with the sounds that will give us the key phonetic context. Help as needed. Reinforce each word.

20. Have child produce combinations of words from these lists which sound make up the key context. Vary Rate of Stress. Reinforce correct productions.

21. Have child make sentences using combinations of two words, one from each of the word lists. Vary Stress patterns. Reinforce correct productions.

22. Go back and run another phonetic context through steps 15, 18 and 19. More contexts should become useable as work progresses on the early sound combination.

V. Carryover

When the child can produce the new sound in all contexts.

23. Present a word list. The child is to make up a sentence and use each word. If he produces the sound correctly, he is reinforced.

24. The child reads sentences containing the sound on which he is working. If he produces all new sounds he is reinforced.

25. The child reads contextual material. As long as he articulates correctly he is permitted to continue. If he misarticulates the sound being worked on he is stopped with the "time-out mask" for 20 seconds.

need to expand the 'talk with' time by the clinician a little each time.

26. The child is asked to make up stories about subjects given him by the clinician. If he misarticulates the sound being worked on, he is stopped with the "time-out mask" for 20 seconds.

27. The child is engaged in an animated discussion about something in which he is interested. If he misarticulates the sound being worked on, he is stopped with the "time-out mask" for 20 seconds.

28. Child is given assignments which involve using the new sound in everyday speech. Child is given slips which he must get signed by parents, teachers, friends, etc., which attest to his using the new sounds in everyday speech. These slips can be exchanged for stamps.

29. Clinician contacts parents, teachers, etc., asking them to socially reinforce the new sound when they hear it.

30. Plan other carryover measures as seem necessary and appropriate.

Total ____ on carryover activities

EVALUATION OF TEACHER-AIDE DIRECTED TAPED INSTRUCTION IN THE EDUCABLE MENTALLY RETARDED CLASSROOM

by

Steven D. Harlow Ph. D.
University of North Dakota

with

John Wallin, M. Ed.
University of North Dakota

PART ONE

PURPOSE OF THIS EVALUATION

The purpose of the current research is to determine the effectiveness of taped instruction under the direction of a teacher aide in the educable retarded special classroom at South Junior High School.

A basic question to be answered by the current research was: "Can educable retarded junior age youngsters who have difficulty mastering information, learn and retain factual information through directed audio tapes?" To answer this question, tests were constructed to represent information contained within six chapters of a social studies textbook. These chapters were transcribed on tapes by the teacher aide.

Students were administered a pre-test before taped instruction began. This pre-test was employed to determine the level of information possessed by the students. After testing, taped instruction commenced. After taped instruction was completed post-test I was administered. Differences in the pre-test and post-test I would be due to changes caused by teacher aide directed taped instruction. After a period of from two weeks to two months post-test II was administered. A comparison of the post-tests was used to determine the degree of retention over a period of time.

Accordingly, the following hypotheses were tested:

Major Hypothesis No. 1

There will be significant differences between scores on the pre-tests and the post-tests of the six chapters.

Sub-Hypotheses of No. 1

1. The scores on the pre-tests and the post-tests on chapter eight will be significantly different.
2. The scores on the pre-tests and the post-tests on chapter nine will be significantly different.
3. The scores on the pre-tests and the post-tests on chapter ten will be significantly different.
4. The scores on the pre-tests and the post-tests on chapter eleven will be significantly different.
5. The scores on the pre-tests and the post-tests on chapter twelve will be significantly different.
6. The scores on the pre-tests and the post-tests on chapter thirteen will be significantly different.

Major Hypothesis No. 2

There will be no significant differences in the amount of material retained or lost when second post-tests on the six chapters are given at a later date.

Sub-Hypotheses of No. 2

1. The scores on the post-tests and the second post-tests on chapter eight will not be significantly different.

f. The scores on the post-tests and the second post-tests on chapter nine will not be significantly different.

3. The scores on the post-tests and the second post-tests on chapter ten will not be significantly different.

4. The scores on the post-tests and the second post-tests on chapter eleven will not be significantly different.

5. The scores on the post-tests and the second post-tests on chapter twelve will not be significantly different.

6. The scores on the post-tests and the second post-tests on chapter thirteen will not be significantly different.

Limitation of the Study

The sample for the present study came from one special education class at the South Junior High School in Grand Forks, North Dakota. Any generalizations drawn from the results must be made in light of the restrictive criteria imposed in the selection of the school, the measuring device used, and the group in which the study was conducted.

Prime consideration must be given to the important role played by the measuring instrument. The tests used were constructed without intention of standardization for this particular group; moreover, no systematic item analysis was attempted. Any generalizations as to the effectiveness of the tapes as a teaching device must be made with caution.

Post-test II was administered after a period of time had elapsed to determine the degree of retention. Between the post-tests no taped instruction was permitted.

Summary of the Findings

The analysis of the pre-test and post-tests revealed:

1. Significant differences were found between the pre-tests and the post-tests on all the tests that had large enough N's, thus indicating that the listening tapes can be effectively used as an instructional method for educable retarded junior high students.
2. Significant differences between post-tests and the second post-tests were not found, except on chapter twelve was significantly different.

Conclusion

The results from this study suggest that the teacher aide directing instructional tapes can be an effective approach when working with educable mentally retarded students at the junior high level. Material learned from tapes is retained to a significant degree by these students over a period of several months.

The success of the present taped instruction experiment is felt by the researcher to be due to the following five factors: (1) The students received individual attention from the teacher-aide while listening and during the testing period. (2) The teacher aide was able to motivate the student when attention began to

wane. (3) There was a reduction of available distractions, making the sessions more conducive to learning. (4) This approach was a new and novel innovation for many of the students and thereby received more attention. (5) Besides the academic side of listening to tapes, the students had tapes made just for their enjoyment. If they enjoy listening to tapes, they will get more out of their taped lessons.

Suggestions for Teaching with Tapes

Several factors that were not indicated in the study need to be examined: (1) Items that included descriptions of land forms, rivers, and states found in different parts of the United States were answered quite often by the students with names and places familiar to them i.e., "What is the largest river in the United States?" "The Red River." The more abstract the question i.e., "What is a peninsula?" The greater the probability of students not responding correctly. This suggests the need for better constructed tapes designed especially for students in the educable mentally retarded classrooms. (2) New material would appear to be more effectively learned by the students when concrete materials are used in conjunction with listening tapes. Instrct-ional aids such as filmstrips, films, and relief maps would assist the students' needs for concrete materials to better understand unknown concepts and ideas.

It is suggested that each child have earphones when he is listening to taped lessons to more effectively reduce distracting stimuli.

Tapes in the future should be prepared so that active responding on the part of the student is required. Thus the student should do more than merely listen. He might, for example, be asked to fill in a blank with a key word gleaned from the tape.

The teacher should be familiar with what is available in prerecorded taped lessons and sources as to where these tapes may be obtained. The teacher should also be acquainted with knowing how to appraise tape recorded material; a key to improved teaching techniques and materials used in the classroom.

PART TWO

USE OF TAPED INSTRUCTION IN THE SCHOOLS

Research related to the use of taped instruction with the educable retarded is indeed scarce. Following will be a review of research and literature pertinent to the use of taped instruction in the regular classroom.

The use of magnetic tape as a means of capturing the audio portion of important events, speeches by famous people, dramatic productions, radio programs, and other worthwhile activities for use in the classroom has been with us since 1950.[1] The use of pre-recorded instructional materials as part of a school curriculum had its beginning in the accelerated foreign language programs that were developed for the armed service schools in World War II. The combination of classroom work and intensive small-group dialogue and practice with individual recorders proved to be highly successful in language teaching and training men and women destined for foreign service assignments.[2]

Since 1952, electronic teaching with tape recorders has been a natural mode of procedure for a group of Benedictine Sisters. They have found that tapes offer individualized instruction for the slow, average, and capable--simultaneously.[3] Two of the key figures in developing this electronic classroom were

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[1]Arthur W. Lalime, "Tape Teaching," Audiovisual Instruction, XII (May, 1967), 453.

[2]Ibid.

[3]Sister Mary Theresa Brantano, O.S.B., "Tape: Multiplier of Time and Personality," Audiovisual Instruction, VII (June, 1962), 369.

Sister Theresa Brentano and Ray N. Toups. What they have experimented with and developed has been a model which other schools have copied. Sister Theresa initiated the use of electronic teaching aids, namely tape recorders and related accessory equipment, back in 1950 in Covington, Louisiana. She felt that many youngsters were not given enough attention and help in their school work. In knowing that there was an abundance of electronic aids in the world of commerce and a scarcity in the area of education, Sister Theresa contacted Ray N. Toups, an electronic technician. He experimented with and designed one of the first electronic classrooms for elementary students. He can be considered one of the pioneers of tape-teaching technicians.[1] Since that time, many improvements have been made and a considerable amount of research has gone into this project.

Educators who have watched this method of teaching over a period of years have decided there are four main factors responsible for the great achievement which the students show: (1) tape teaching is suited to the student's needs; (2) it brings him superior instruction; (3) it provides greater concentration on earphones; and (4) it brings the student into closer contact with his teacher, since it makes possible for the teacher to meet the students in smaller groups.[2]

This tape teaching project has been one of the few reported

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[1]Clifford J. Laube, and Sister Mary Theresa Brentano, O.S.B., "Individualized Instruction Through Tape Teaching," National Catholic Educational Association Bulletin, LV (February, 1959), 13.

[2]Sister Mary Theresa Brentano, O.S.B., "Tape: Multiplier of Teacher's Time and Personality," 369.

in the current literature, and indicates the need for considerable research and experimentation with available equipment in different classroom situations.

The National Education Research Division queried a sample of 1,609 teachers in school systems across the nation in the spring of 1967, to find out what types of teacher instructional resources were currently being used in the classroom. Their findings indicate that at the elementary level, teachers use mainly records, films, and tapes of the instructional resources, whereas the secondary level teachers desired more usage of the educational television and films. At the secondary level, 80.4 per cent of the teachers indicated that an audio-tape recorder was available to them to use in the classroom. As far as the instructional resource most desired by the secondary teachers, only 4.0 per cent indicated the audio tape recorder.[1] The lack of published research at the secondary level correlates quite highly with the sampling of secondary teachers' desire to use the tape recorder as an instructional resource.

There appears to be quite a number of experiments being done with tape recorders within school systems across the nation if the number of tape recorders and the number of tapes available to the different schools are any indication as to the amount that they are used. This lack of published research indicates that either the teachers haven't considered the role that the tape recorder can play in the classroom important enough to

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1"Instructional Resources in the Classroom," NEA Research Bulletin, XLV (October, 1967), 75.

report it, or, they haven't been able to conduct a research project to test the advantages or disadvantages of using a tape recorder in the classroom.

Since 1952 to 1962, statistics submitted by the Benedictine Sisters have shown that tape students made approximately twice the amount of progress as achieved by ordinary students. In this study there were 800 tape students represented in 19 classrooms as contrasted with a corresponding number of students and an equal number of classrooms which served as a control group. Standardized tests in practically every circumstance showed the same results, provided that the students had a considerable number of tapes in any subject, and that the teacher did not require the pupils to proceed in the lockstep system.[1]

Gallacher and Stevens experimented with several eighth grade students who had difficulty in math, and set up taped lessons designed for these students. Although they used the tapes in conjunction with several other methods of study, these students were able to learn arithmetic tables that they had not mastered before being exposed to these tapes. They commented, "It is interesting to note that no student, even those with I.Q.'s in the 70's was too low in ability to learn the tables."[2]

Mrs. R. E. Gibson reported on the Westside High School teaching-by-tape project. In this study, two relatively low

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[1]Sister Mary Theresa Brentano, O.S.B., "Tape: Multiplier of Teacher's Time and Personality," 369.

[2]Ted Gallacher and Ray C. Stevens, "Teaching with a Tape Recorder," California Journal of Secondary Education, XXIX (October, 1954), 313.

ability seventh grade groups were compared. One had used the seventh grade tapes plus a sixth grade word list made up of words actually missed by the members of the group in written tests and daily papers. This was the experimental group. The control group studied under the regular classroom teaching methods. From the analysis of co-variance it was apparent that the difference between the means of these two groups was not significant. It was therefore concluded that there are neither advantages nor disadvantages in using spelling tapes with the slightly below normal pupils other than the amount of time saved by the teacher for other activities while the tape lesson is in progress.[1]

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[1]Mrs. R. E. Gibson, "Final Report on the Weside High School Teaching-By-Tape Project," The Bulletin of the National Association of Secondary School Principals, XLIV (January, 1960), 58.

PART THREE

METHODOLOGY AND PROCEDURES

This part contains a brief description of the students involved in this study, a discussion of the test construction, the procedures followed, and an examination of the statistical technique used in the analysis of the data.

Student Sample

The students in the present research were from the Educable Mentally Retarded Special Education Class of South Junior High School in Grand Forks, North Dakota. Specifically, the research sample consisted of nine students, ranging in ages from thirteen to seventeen, and possessing I.Q.'s between sixty and eighty. Only seven of the students were included in the statistical procedures since two students were not able to complete the entire program.

Test Construction

The teacher's aide recorded six chapters from the social studies textbook, Your Country and Mine, published by Ginn and Company, on a Sony four track tape recorder. The chapters were taken from Unit Two, "Living in Our Country." After the material was recorded, Mr. John Wallin, a graduate student in special education at the University of North Dakota, read the text and listened to the tapes to obtain important concepts and

facts for the test items. A test comprised of a combination of multiple choice and completion type questions was constructed by Mr. Wallin based upon the six chapters. Each individual answer had the value of one point and some questions had several right possible answers. Twelve to nineteen points were possible depending upon the chapter test; a total of ninety points were possible for all of the chapter tests. The factor of degree of difficulty for each test item was not taken into consideration.

Nine students were selected to participate in the taped program. These students were chosen because their schedule allowed the free time necessary for participation. Before the students listened to any tapes, the teacher's aide orally administered a pre-test to the students. After a student had completed a chapter on the listening tape, the teacher's aide asked the students each of the test questions on a chapter and then recorded the student's response. The teacher's aide would repeat or clarify a question for the student if it was needed. After the students completed the six chapters, they were given a second post-test to determine the amount of retention over a short period of time.

All of the listening and testing was done in the health room at the South Junior High School building. The administration of a chapter test could not be done in one day and resulted in the following schedule:

1. The pre-tests were given to the subjects between January 8 and 13, 1969.

2. Testing for the post-test by chapters included the following schedule:

Chapter 8	January	9-20, 1969
Chapter 9	February	14-26, 1969
Chapter 10	March	17-27, 1969
Chapter 11	March	17 to
	April	3, 1969
Chapter 12	April	10-17, 1969
Chapter 13	April	19-24, 1969

Difference in the test dates for each chapter is due to the conflict of scheduling time for most of the students involved in the study. All of the post-tests II were given to the students between May 2-15, 1969.

Statistics Employed

The Wilcoxon Matched-Pairs Signed-Ranks Test was used to determine the direction and magnitude of the differences within the pairs of tests. The Wilcoxon test gives more weight to a pair which shows a large difference between two conditions than to a pair which shows a small difference. In having the ordinal information within the pairs and the differences between the pairs, the researcher was able to make the judgement of "greater than" between any pair's two performances, and also could make the judgement between any two different scores arising from any two pairs. The resulting ordered metric scale lies, in strength, between an ordinal scale and an interval scale.[1]

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[1]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), p. 76.

PART FOUR

ANALYSIS AND RESULTS

The analysis and results of this study are presented in the order of the hypotheses stated in Part I.

Major Hypothesis No. 1

There will be significant differences between scores on the pre-tests and the post-tests of the six chapters.

Sub-Hypotheses of No. 1

1. The results in Table 1 show the students' pre- and post-scores on chapter eight were significantly different at the .01 level.
2. The results in Table 1 show the students' pre- and post-scores on chapter nine were significantly different at the .025 level.
3. The results in Table 1 show the students' pre- and post-scores on chapter ten were significantly different at the .025 level.
4. The results in Table 1 show the students' pre- and post-scores on chapter eleven were not significantly different.
5. The results in Table 1 show the students' pre- and post-scores on chapter twelve were significantly different at the .025 level.

PART FIVE

SUMMARY AND CONCLUSIONS

Summary of the Problem

The purpose of this study was to evaluate the effectiveness of instructional tapes directed by a teacher aide as an instructional method with educable retarded junior high students. To this end an instrument was created and measurements were obtained regarding information learned through tapes and the degree of retention of this material.

Summary of the Methodology and Procedures

The population for the study consisted of seven educable mentally retarded students in a special education class at the South Junior High School in Grand Forks, North Dakota. Only the students in this class who did not have a conflict with time schedules participated in this study. Although the test was constructed by the researchers, the test was administered and results recorded by the teacher's aide, an individual who had established a good rapport with the students.

A pre-test was administered to determine the students' information level before taped instruction began. After the tapes were listened to by the student, post-test I was given. This test measured the change in level of information. Changes in information were due to taped instruction under the direction of the teacher aide.

TABLE 1

RESULTS OF THE WILCOXON MATCHED-PAIRS SIGNED-RANKS TEST ON THE PRE-AND THE POST-TESTS

	Pre to Post	Pre to Post Significance
Chapter 8	T = 0 N = 7	.01
Chapter 9	T = 0 N = 6	.025
Chapter 10	T = 0 N = 6	.025
Chapter 11	T = 0 N = 5	--
Chapter 12	T = 0 N = 6	.025
Chapter 13	T = 2 N = 6	--

6. The results in Table 1 show the students' pre- and post-scores on chapter thirteen were not significantly different.

The significant differences that were shown on all but two of the tests give an indication that the taped lessons were effectively learned by the students.

Major Hypothesis No. 2

There will be no significant differences in the amount of material retained or lost when second post-tests on the six chapters are given at a later date.

Sub-Hypotheses of No. 2

1. The results in Table 2 show that the scores on the second post-tests on chapter eight were not significantly different.
2. The results in Table 2 show that the scores on the second post-tests on chapter nine were not significantly different.
3. The results in Table 2 show that the scores on the second post-test on chapter ten were not significantly different.
4. The results in Table 2 show that the scores on the second post-tests on chapter eleven were not significantly different.
5. The results in Table 2 show that the scores on the second post-tests on chapter twelve were significantly different at the .05 level. This particular chapter had the largest loss of total points.
6. The results in Table 2 show that the scores on the second post-tests on chapter thirteen were not significantly different.

The lack of significant differences on all but the chapter twelve test indicates that the material was retained over a short period of time (varying from two weeks to two months).

TABLE 2

RESULTS OF THE WILCOXON MATCHED-PAIRS SIGNED-RANKS TEST ON THE POST- AND SECOND POST-TESTS

	Post to Post	Post to Post Significance
Chapter 8	T = 9 N = 7	--
Chapter 9	T = 0 N = 5	--
Chapter 10	T = 5.5 N = 6	--
Chapter 11	T = 0 N = 5	--
Chapter 12	T = 0 N = 6	.05
Chapter 13	T = 0 N = 4	--

During the charting of the students' scores, an outwardly misleading factor occurred. Although a pre-test and a post-test score appeared to be nearly the same for an individual, they were not equal in value. Several students apparently guessed correctly certain multiple choice items and missed completion items on the pre-test. After listening to the tapes, they were able to answer correctly the more difficult completion items but picked incorrectly multiple choice answers.

The majority of the students were able to retain some information long enough to make their score significantly different from what they scored on the pre-test. It should be noted that while this study in stating that through listening tapes, significant results took place, is not to say that another instructional method could not have done as equally well or better than this method for presenting new concepts and information to the educable mentally retarded student.

PART SIX

APPENDICES

APPENDIX A

TESTS USED IN THE STUDY FOR DETERMINING THE EFFECTIVENESS OF LISTENING TAPES UNDER THE DIRECTION OF A TEACHER AIDE IN A JUNIOR HIGH SPECIAL CLASS

QUESTIONS TO ACCOMPANY A SOCIAL STUDIES TAPE FROM THE TEXT YOUR COUNTRY AND MINE, GINN AND COMPANY

UNIT TWO
LIVING IN OUR COUNTRY

CHAPTER 8 THE UNITED STATES AS A WHOLE: A LARGE AND VARIED LAND
P. 146

NAME_____DATE____

1. From North Dakota, what direction, (N,S,E,W) would you travel to reach the Atlantic Ocean?_____Pacific Ocean?_____

2. What country is our neighbor to the North? South?

3. If you were to take a trip, what trip would take longer-- to go from New York to California_____? or to go from North Dakota to Texas?_____

4. Which of the following land descriptions would best describe what kind of land forms make up the United States?

___A. Low and flat land
___B. High and rocky land
___C. Grassy plains
___D. A combination of A, B, & C

5. From North Dakota, what direction would you travel to see the highest and the most mountains in the United States?

6. What is the method called when men bring water to a dry land so they can grow crops on it?

7. What is the largest river found in the United States?

8. Name all of the Great Lakes that you know.

1. 4.
2. 5.
3.

9. Name 4 natural resources that we have here in North Dakota.

1. 3.
2. 4.

10. In the Eastern part of the United States there are many mountains and a lot of hilly land. What is the name given to the hills and mountain ranges found in the east?

SCORE: 19

NAME_____DATE_____

UNIT TWO
CHAPTER 9 THE NEW ENGLAND STATES: PART OF OUR NORTH COUNTRY P.159

1. The place where men work to cut, drill, and to take out building stone is called a _____.

2. List 3 disadvantages of farming in the New England states.
   1. 2. 3.

3. If you were to pick cranberries that are grown in many of the New England States, you would look for what type of land?

4. What time of year would you catch the most cod?

5. List 2 reasons why you find large cities near harbors.
   1. 2.

6. What is the name of New England's leading seaport? (It is called New England's Hub.)

7. Name two valuable types of rock, quarried out of the New England States.
   1. 2.

8. What is the largest river in the New England area? (It is also the name of one of the states.)

9. Maples, birches, and oaks lose their leaves and are called _____trees.

   Pines, firs, and spruces keep their needles and are called _____trees.

10. Wharves would be used mainly by:
    1. Farmers
    2. Doctors
    3. Teachers
    4. Fishermen
    5. Pilots

SCORE: 15

NAME_____DATE_____

UNIT TWO
CHAPTER 10 THE MIDDLE ATLANTIC STATES P. 175

1. The capital of the United States, located at Washington,D.C., is located in what state?

2. What is the leading manufacturing state in the United States?

3. Name a state in the United States and a country that you could go to see Niagra Falls.
   1. 2.

4. Which direction does the St. Lawrence River flow? SE, NE, SW,NW

5. What do we call a large farm that may grow such crops as cotton or tobacco on it?

6. List 3 things that you could buy at a truck garden.
   1. 3.
   2.

7. If you were going to buy the best grade of coal, would you buy bituminous or anthracite?

   What makes it the best? List 2 reasons. 1.
   2.

8. What state in the United States would you go to if you were a coal miner and could afford to buy up the best coal mines in that state?

9. If you were to make concrete, what type of rock would you need to have to make it?

10. The Statue of Liberty, found in New York Harbor, is a gift from what country?

SCORE 15

NAME_____DATE_____

UNIT TWO
CHAPTER 11 THE SOUTHERN STATES P. 192

1. People from what country settled in Florida?

   What language do they speak?

2. Traveling between 400 and 500 miles a day, how many days would it take you to travel from Grand Forks to Tallahassee, the capitol of Florida?

3. Why is Florida called the peninsula state?

   Describe what a peninsula is.

4. What major river flows through the Southern States?

5. Would you find a delta at the source, or at the mouth of a river?

6. List two important reasons why trees would grow faster in the southern states than in the northern states.

7. We find the oldest city in the United States in what state?

   What is the name of this city?

8. One of the largest swamps in the United States is found in Florida. What is the name of this swamp?

9. We find in the United States different belts; such as the dairy and corn belts. What belt would we find in the southern states?

10. What very important mineral is found in the southern states, and has made many people very wealthy?

SCORE: 14

NAME_____DATE_____

UNIT TWO
CHAPTER 12 THE CENTRAL STATES: THE "FOOD BASKET" OF OUR NATION P. 211

1. One of the biggest manufacturing businesses in the United States is the manufacturing of cars. What state produces the most new cars?

2. What is one of the <u>largest</u> corn producing states in the United States?

3. What state is the la st producer of Spring Wheat?

4. In the Dairy Belt, what are the two leading dairy states?

   1. 2.

5. About how many months is the growing season in North Dakota? _____ In Florida?_____

6. We find large sources of gravel in Minnesota and Wisconsin; what are two important uses for gravel?

   1. 2.

7. What are the 2 largest manufacturing cities in the <u>Central</u> States?

   1. 2.

8. Between North Dakota and Minnesota, what important river do we find?

9. List 2 reasons why Chicago has been a good spot for a city to be located.

   1. 2.

10. Minnesota mines a very important mineral used in the production of cars, what is this mineral called?

SCORE: 15

NAME_____DATE_____

UNIT TWO
CHAPTER 13 THE WESTERN STATES: LAND OF GREAT CONTRASTS P. 231

1. What state is the largest of the western states?
2. Name one of the two lowest regions in the United States. Both are over 200 feet below sea level.
3. What river flows through the Grand Canyon? (It is also a name of one of the western states.)
4. What type of construction makes it possible to produce electricity, and also will provide water for irrigation?
5. From what fruit do we get raisins from?
6. The <u>Northwest</u> is noted for what land industry?
7. What famous bridge can be found over the San Francisco Bay?
8. What 2 industries in the west remind us of cowboys?

   1. 2.
9. What part of the United States would we find the Great Basin?
10. What state reminds you of orange orchards?

    Apple orchards?

SCORE: 12

APPENDIX B

A PARTIAL SOURCE LIST OF EQUIPMENT AND SUPPLIES FOR TAPE TEACHING

Pre-Recorded Tapes

***AVID Corporation, Instructional Systems Division, 10 Tripps Lane, East Providence, R.I. 02904

EMC Recording Corporation, 806 East 7th Street, St. Paul, Minn.

Language Training Aids, 12101 Valleywood Drive, Silver Spring, Maryland

*National Tape Depository, Audio-Visual Center, University of Colorado, Boulder, Colorado

*National Tape Library, 930 F Street, N.W., Washington, D.C.

A-V Tape Libraries, Inc., 730 Fifth Avenue, New York, New York

Educational Development Laboratories, Huntington, New York

Electronic Future, Inc., 301 State Street, New Haven, Conn.

Heath, de Rochemont Corporation, 9 Newbury Street, Boston, Mass.

Institute of Languages and Linguistics, Georgetown University, Washington, D. C.

***Knowledge Aid, 8220 North Austin Avenue, Morton Grove, Ill. 60053

*National Association of Educational Broadcasters, 14 Gregory Hall, University of Illinois, Urbana, Illinois

Phonotapes, Inc., 248 West 49th Street, New York, New York

Spoken Arts, 275 Seventh Avenue, New York, New York

Spoken Word, 10 East 39th Street, New York, New York

World Tapes for Education, Box 9211, Dallas, Texas (recordings from students, teachers, and others from various parts of the world)

Write also to State University Audiovisual Centers.

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THE DEVELOPMENT OF A PHYSICAL EDUCATION PROGRAM FOR MENTALLY RETARDED STUDENTS IN WINSHIP SCHOOL, GRAND FORKS, NORTH DAKOTA

by

William E. Graveline
Grand Forks Public School District #1

INTRODUCTION

Physical Education for the mentally retarded in the Grand Forks Public schools has mainly been provided through regular Physical Education classes. The special education program at Winship School has been restructured to include physical education classes distinctly for the mentally retarded students.

This shift in organization has required a variety of changes in the physical education needs of the school in reference to equipment, facilities, objectives etc. These needs are being provided for in order to present a very thorough P.E. Program to the special education classes at Winship.

OBJECTIVES

The broad objectives of the physical education for the mentally retarted children does not differ greatly from the objectives for classes of normal children. The difference in the programs is in the areas of emphasis. This area of emphasis is generally based on the needs and background of the children. The type of grouping used is an important factor since any additional handicap the children may have could effect the objectives.

The specific objectives of the program were established as social growth, balance, agility, and coordination. These specific objectives were not established at the expense of physical fitness or skills but as the main area of concentration. This decision was arrived at after careful consideration was given to the background and needs of the students. The specific

objectives of the program will expand as the background is established sufficiently to create logical progression.

ORGANIZATION

The physical education program was organized to allow for small classes grouped according to mental ability. The classes were coeducational and chronologically grouped within a narrow range. Two groups were observed and evaluated. The first class consisted of 9 students. There were 5 boys and 4 girls. Two boys were added later in the year to bring the total to eleven. None of these students suffered physical disabilities.

Hyper activity and mental retardation were the only debilitating conditions.

This class was observed throughout the year. The greatest progress appeared to be with the students who were not able to participate in a regular physical education class. Those students able to attend the regular classes did not appear to benefit to any great extent.

The second class consisted of three students of a younger age. Their activity was beneficial because of their extreme hyper-active nature. They appeared to benefit from playing with others.

The program lasted for thirty minutes, once a day for every school day. In addition to this many students also participated in regular physical education classes according to their chronological age.

The special classes were planned to offer a variety of

activities during each period so there would be little boredom due to the short attention span of the mentally retarded. Activities were planned so they would coordinate with the seasons. Outdoor games were played in the fall and spring.

ACTIVITIES

The activities that were planned for the school year were quite similar to activities of a regular physical education class with two major exceptions. One area of difference is in team sports. The mentally retarded at this age will not function well on a team. They will not be capable of handling the organization and responsibility necessary to play on a team. The other basic difference from the regular physical education curriculum is in activities requiring a high degree of skill.

Most of the activities used may be placed under two broad headings: Low-organized games and individual activities. Some of the activities used are listed below:

Fall:	Winter:	Spring:
Tag Games	Ball Bouncing	Track
Low Organized Games	Tumbling	Kickball
Basic Movement Exercises	Rhythms	Dodgeball
Ball Bouncing	Low Organized Games	Jumping
	Basic Movement	Rope Jumping
	Obstacle Courses	Ball Bouncing
	Apparatus	Deck Tennis
	a. Balance Beam	Exercises
	b. Ladder	
	Exercises	

FACILITIES AND EQUIPMENT

The facilities available for the program are very adequate. The school has large playgrounds and large ground floor room was provided for indoor activities. This room was not large enough for running or team games but these activities were not

planned.

The school principal is very instrumental in removing hazards from the play area and making storage space available for equipment. He has shown a great deal of interest in providing adequate facilities in an already crowded situation. Much of the success of this program will be due to his help.

The equipment needed to start the program was quite extensive since none existed prior to this school year. The program was started as a result of being able to borrow equipment from the physical education department.

An order for new equipment was placed with various school supply companies in order to operate the program on a permanent basis. This equipment arrived sporadically over a period of time which caused a little shifting of activities but caused no great hardships.

A list of the equipment ordered is as follows:

1 play ball set
2 12" bases from Brudden-Porter Gymnster
1 "T" Beam from Brudden-Porter Gymnster
1 Tun-L-Fun (Red)
1 Tun-L-Fun (Yellow)
3 Rocker Walkers
1 Table Tennis Table w/casters
1 Natural Cork Bulletin Board
1 Reem Califone Record Player
4 Mat Modules
1 Rope Skipping Kit
1 Heavy Duty School Bag Outfit
1 Four Player Table Tennis Set
1 Four Ring Quoit Set
5 Utility Balls
1 Steel Basketball Backboard with 1 ft. extension
1 Jumpaleen
1 Record - Body Image
1 Record - Simplified Folk Dances
1 Deck Tennis
1 Bean Bag Game

The equipment ordered was based on the expected needs of our specific curriculum. The facilities and storage were considerations that were kept in mind while forming decisions concerning purchases.

ANALYSIS

The analysis of the program is to be based on personnel evaluation of the teacher, myself and the school principal. This type of evaluation was chosen rather than agility tests and socio-grams because of the newness of the program and inability to predict early developments in the program. As the project expands and more objectives are included in the planning, specific tests may be used on a test-re-test basis.

MID-YEAR EVALUATION
of the
PHYSICAL EDUCATION PROGRAM
for the Mentally Retarded
at Winship School
4-18-69

INTRODUCTION

The Physical Education program at Winship School has progressed well within the guidelines established at its beginning. The continued cooperation of the Grand Forks Public Schools, Winship School and the Special Education Department of the Grand Forks schools has made it possible for most general objectives to be met.

FACILITIES

The original planning for this program required an extreme

amount of cooperation since no specific facilities existed previously. The facilities have been improved considerably and are complete with the exception of a few structural changes necessary for more vigorous activities.

OBJECTIVES

Objectives adopted at the on-set of this program were broad because of the background of the students, grouping which was necessary, and facilities which were available. At the present time it would appear that the progress that was expected, is being noted. Most progress appears to be in the students who would not benefit from attending regular physical education classes. There appears to be a considerable amount of social growth in some of the students. This is apparent in their willingness to participate more actively than they did at first.

PROGRAM

The remainder of the year will be spent in various outdoor activities which will allow more vigorous activities. The activities for the remainder of the year will be such that they require more physical stamina which will help to determine the guidelines for the program for the coming school year.

EVALUATION

On a whole the program has been very successful in meeting the objectives that were set at the beginning of the year. It appears at this time that the program should continue with few, if any, changes. The staff at Wins[illegible] School is in a

large degree responsible for the success of the program.

The Physical Education Program
For The Mentally Retarded Students
At Winship School, Grand Forks, North Dakota
6-15-69

INTRODUCTION

The special physical education program for the mentally retarded children at Winship School eompleted its first year with the close of school in June 1969.

The program was conducted within the broad objectives set up to determine the needs of the students. The objectives were met reasonably well, but many problems were exposed which should be solved for the next school year.

OBSERVATION

A. Objectives

The objectives established for the program were general since no precident had been established in the program. The program was geared to improvement of social growth, balance, agility, and coordination.

There was no pre-test, or post-test used to determine development. It had been decided to use observation to determine growth in these areas.

Evidence pointed to marked growth in the areas of balance, agility and coordination, but social growth in most of the studetns was not satisfactory.

This problem may have developed due to the grouping methods

used. An added emphasis must be placed in this area in the future.

B. Organization

The most important structural change in the program should be in grouping. Most classes were grouped according to mental ability but there would be reason to believe that the students should be grouped according to physical ability and sex.

The wide range of abilities of the students made it impossible to structure classes where needs would be met. The sizes of the class appeared to be very workable but the apparent differences in physical ability created problems.

There appears to be a need to group by sex as well as physical ability since the girls were not able to compete with the boys and thus were denied an equal amount of participation.

The length of the class period, the time of the day and number of days in the week appeared to be in proper proportion.

Due to the number of class periods, the instructor must provide a variety of activities in order to present an ever challenging program.

C. Activities

The activities offered in the program appeared to be adequate for the objectives of the program. There were a couple areas of emphasis that should be adjusted in order to bring the program in line with the needs of the students.

The Rhythms activities should be broadened and increased in frequency. This particular part of the program may help reach the objectives of coordination and agility.

The low organized games that were conducted during the year seemed to work very good. It appeared that more activities of this type would be used. Also a greater variety of activities could have improved interest in this activity.

The team games that were played did not prove satisfactory but most of the problems in this area appeared to relate to grouping. Many of these activities could be a satisfactory part of the program if the skill level of the students was similiar.

There appeared a need for more running activities. This need could be met in the fall and spring but winter presents a problem. It would improve the program considerably if the students were allowed to use the school gym at least one day per week, provided that it was available.

D. Facilities and Equipment

The facilities at Winship School were adequate. The room is small but provides most of the required area to operate all activities that are planned for the program.

There appeared to be a need for removal of a few hazards. The windows should be screened and tables, benches, brooms etc. removed from the room. Also a coat of paint would give the room some added life.

The equipment used in the program was of good quality and variety. There appeared to be a shortage of rythms records that would have to be connected. Also the basketball net and rim should be installed. This item would require covering fire extinguishers, light fixtures, and windows.

Over all the equipment was of good quality and in generous

supply. There would be a need to increase and replace this as the program progresses.

The outdoor facilities and playground area is very adequate for the needs of the students. The playground is large with a protective fence. The only problem appeared to be a rough rocky surface which could prove hazardous.

EVALUATION

In observations that I conducted there appeared to be a definite progress for the students not able to attend regular classes. A noticable improvement in coordination, balance and agility occured with one boy and one girl in the first class. There was slightly less progress noted for 3 girls and 4 boys in the first class and two boys in the second class while the remainder of the class did not show significant progress in these areas.

Although observation was used for evaluation the progress was such that this method could prove quite valid. Selected items on the Iowa Brace Test will be used for an objective evaluation for 1969-70.

The Physical Education Program for the Mentally Retarded students at Winship School was conducted under broad guidelines in its initial beginning. This was done to determine the specific needs of the students and how best to meet these objectives.

My observations of the program would call for certain

structural changes to be implemented in 1969-70 school year. There appeared to be a need for more clearly defined objectives.

The first basic structural change would have to be in the area of grouping. There appeared to be a need to group the students according to physical ability. There were a few of the more advanced students that would probably benefit from regular physical education classes.

The second area to be concerned with is in the area of curriculum. It appeared that at this particular level most team games were not too successful. The facilities will have to be geared to include more individual activities.

Discipline appeared to be particular part of the curriculum that should be defined. It appears that the needs of the students in this area were not too clearly outlined. The program in 1969-70 should include a specific guideline in this area.

The last area to be planned in our guidelines for next year should include objectives and testing. It appears that physical fitness should be a specific goal for the program.

In conclusion I would like to state that the program was a success in its first year, but the continued success of the program will depend largely to the restructuring done in 1969-70.

ANALYSIS OF PROGRAM

It is my opinion that the program progressed very well for its first year. The objectives were met and the program

appeared to answer the needs of the students.

Much of the success is due to the patience of Mrs. Griffin, the instructor, and Mr. LaBelle, the principal. These people showed a high interest in the success of the program.

RECOMMENDATIONS

1. Regroup the students according to sex and physical ability, and allow the students to participate in regular physical education classes whenever possible.
2. Increase the number and variety of activities in the rhythms and low organized games. The Grand Forks Public School Physical Education Curriculum Guide may be of help in this area.
3. Proceed with remodeling of the playroom to remove hazards and improve its attractiveness.
4. Allow a greater amount of free play during class periods.
5. Restructure the discipline to eliminate students from leaving the classroom, resisting participation etc.
6. Include a hygiene and health supplement which would require the students to wash their hands and face and comb their hair after physical education class.
7. Make an attempt to test and evaluate the students during the 1969-70 school year. This testing should emphasize the particular objective of the program.